EG&G ER Program
Rocky Flats Plant

(2/23/90)

ER PROGRAM DATA ASSESSMENT SUMMARY REPORT FORM

Batch No. 8909S083 - E0734 **Site** Area 2 - Hillside

Laboratory TMA/Eberline **No. of Samples/Matrix** 6/Water

Reviewer Org. TechLaw, Inc.

Sample Numbers SW070006, SW069006, SW068006, SW067006, SW066006, SW031006

Alpha Spectrometric Analyses Data Assessment Summary

		Iso-Us	Iso-Pus	Am^{241}	Comments
1.	**Holding Times**	V	V	V	
2.	**Initial Calibrations**	A	V	V	See Action Item 1.
3.	**Blanks**	V	V	A	See Action Item 2.
4.	**Lab Replicates**	V	V	V	
5.	**Lab Control Samples**	V	V	A	See Action Item 3.
6.	**Resolution**	V	V	V	
7.	**Recovery Factors**	V	V	R	See Action Item 4
8.	**Sample Calculations**	V	V	V	
9.	**Overall Assessment**	A	V	R	

V = Data had no problems.
A = Data acceptable but qualified due to problems.
R = Data rejected.
X = Problems, but do not affect data.

Data Quality: Data for Iso-Uranium analysis in the above batch were reviewed and found to be acceptable with qualifications. Data for Plutonium analysis in the above batch were reviewed and found to be valid. Data for Americium analysis were reviewed and found to be rejected. Refer to action items and comments listed below for discussion. Acceptable, qualified data may be used provided that individual values impacted by the "Action Items" listed below are appropriately flagged. (Refer to attached Results Summary Table).

ADMIN RECORD
A-OU01-000064

"REVIEWED FOR CLASSIFICATION
By R. B. Hoffman
Date 7-11-90

REVIEWED FOR CLASSIFICATION/UCNI
By George H. Setlock
Date @ 6/27/90

e0734/nk39

Action Items: 1) The efficiency on detector #16 shows a drop from 35% to 25% on the most recent weekly efficiency spectra dated 2/5/90; thus the iso-Uranium value for sample SW031006 was flagged as estimated (J).

2) One reagent blank out of two for the Am^{241} analysis in this batch exceeded the Minimum Detectable Activity (MDA); thus all data were flagged as estimated (J).

3) One of two lab controls (LCSs) for the Am^{241} analysis was outside 2 σ but within 3 σ control limits; thus all data associated with these LCSs were flagged as estimated (J).

4) The Am^{241} analysis of samples SW070006, SW069006, SW068006, SW066006, and SW031006 had chemical recoveries less than 12%; thus the data were flagged as rejected (R).

Comments: 1) The weekly efficiency check spectra for alpha detector #16 shows a drop from 35% at the time of the analysis of this batch to 25% on 2/5/90; thus the results for iso-Uranium obtained on this detector were flagged as estimated (J).

2) One out of two reagent blanks for the Am^{241} analysis of this batch exceeded the MDA; thus all data associated with the blank were flagged as estimated (J).

3) One out of two LCSs for the Am^{241} analysis was outside 2 σ but within 3 σ control limits; thus all data associated with these LCSs were flagged as estimated (J).

4) The Am^{241} analysis of samples SW070006, SW069006, SW068006, SW066006, and SW031006 had chemical recoveries of less than 12%; thus all data were flagged rejected (R).

The Required Detection Limit (RDL) for Am^{241} analysis was not achieved on samples SW069006 and SW068006, due to matrix problems.

The channel by channel printout copies were poorly centered, and it was hard to verify isotopic identities and count sums.

The cumulative nature of the above flags caused the overall assessment of the Am^{241} analysis to be flagged as rejected (R).

Note: Data Summary Tables are attached.

Richard Thurman — Reviewer Signature

2/23/90 — Date

RADIOCHEMICAL ANALYSIS
ANALYTICAL RESULTS (pCi/L)

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SITE NAME: Area 2 - Hillside

Sample Location																																
Sample Number		SW070006			SW069006			SW068006			SW067006			SW066006			SW031006			Reagent Blank			Reagent Blank									
Sample Date		9/26/89			9/26/89			9/26/89			9/26/89			9/26/89			9/26/89			12/6/89			12/7/89									
Matrix		Water			Water			Water			Water			Water			Water			Water			Water									
Parameter	DL pCi/L	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-		Val.	+/-								
Gross Alpha	2																															
Gross Beta	4																															
Total Strontium	1																															
Total Cesium	1																															
Radium 228	1																															
Tritium	400																															
Uranium 234 & 233	0.6	4.3	1.2	V	3.2	1.0	V	4.3	1.3	V	4.0	1.2	V	3.9	1.4	V	3.2 J	1.2	A	0.6	0.5		0.1	0.2								
Uranium 235	0.6	0.5	0.4	V	0.2	0.3	V	0.4	0.4	V	0.1 U	0.3	V	0.2	0.3	V	0.1UJ	0.3	A	0.0	0.2		0.2	0.3								
Uranium 238	0.6	4.5	1.2	V	3.6	1.1	V	5.0	1.3	V	4.7	1.3	V	3.5	1.3	V	3.7 U	1.3	A	0.4	0.4		0.2	0.4								
Plutonium 239 & 240	0.01	.01 U	.01	V	.01	.01	V	.03	.01	V	.05	.02	V	.01	0.0	V	.01 U	.01	V	.01	0.0		0.0	0.0								
Americium 241 & 242	0.01	.09	.03	R	<.01U	.03	R	.02 U	.05	R	.32 J	.07	A	.13	.04	R	.09	.04	R	.02	.03		.04	.03								
Radium 226	0.05																															
Gamma scan																																
Other Isotopes																																

U Indicates the parameter was not detected above the Instrument Quantitation Limit
J Quantitation is approximate due to limitations identified during the quality control review
* Value is rejected due to other contractual criteria examined during the quality control review
** Value is rejected due to blank contamination identified during the quality control review
DL Detection Limit in PicoCuries per Liter (pCi/L)

DQ Data Qualifier
V Valid
A Acceptable with qualifications
R Rejected

e0734L/rk39

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Rocky Flats Plant

Radiochemical Data Completeness
Checklist for Alpha Spectrometric Analyses
of Soil and Water

A. Yes ___ Case Narrative
- Yes ___ Abnormalities explained
- Yes ___ Matrix Problems explained
- Yes ___ Instrument problems explained
- Yes ___ Improper collection, storage, preservation, container explained
- Yes ___ Hold times were met, explained if not met

B. Yes ___ Initial and Continuing Calibration Data Package
- Yes ___ Detector ID
- Yes ___ Analyst initials
- Yes ___ Date, Time calibrated
- Yes ___ NIST traceable standards with certification dates and DPMs
- Yes ___ Observed channel numbers of isotopes of interest
- No ___ Book values for proper channel numbers of isotopes of interest
- Yes ___ Voltage settings, gain settings, vacuum settings
- Yes ___ FWHMs in spectra, peak heights
- Yes ___ Results of chi square test for background

C. Yes ___ Blanks Data Package
- Yes ___ ID number of each detector blank is counted in
- Yes ___ Analyst initials
- Yes ___ Date, Times of counts
- Yes ___ Number and ID of samples included with the blank
- Yes ___ Type of method blank used, MDA of method

D. Yes ___ Replicate Sample Data Package
- Yes ___ Detector ID
- Yes ___ Analyst Initials
- Yes ___ Date, Time Analyzed
- Yes ___ Value obtained for sample, replicates, mean values
- Yes ___ Count Durations of samples and backgrounds
- Yes ___ Statistical Analysis of Range, Control Limits

E. Yes ___ Lab Control Samples Data Package
- Yes ___ Sample ID, Detector ID
- Yes ___ Analyst initials
- Yes ___ Values obtained, true value of sample
- Yes ___ Statistical Analysis of Results

F. Yes Minimum Detectable Activity
- Yes Background Measurements
- Yes Detector ID
- Yes Date and time of count, counting duration
- Yes Mean background CPM over long period
- Yes Calculated MDA for isotope of interest

G. Yes Internal Recovery Factors
- Yes Efficiency determined experimentally, copy of raw data
- Yes Detector ID
- Yes Analyst Initials, Date, Time of count
- Yes Isotopic Tracer used and DPM value
- Yes Certification Date of Tracer
- Yes Net CPM obtained
- Yes Count duration
- Yes Overall Efficiency Factor
- Yes Instrument Efficiency
- Yes Calculated Chemical Recovery

H. Yes Sample Data Package
- Yes Printed report of results for sample, reruns
- Yes Computer calculations